CLAIMS

WHAT IS CLAIMED IS:

1.   A vehicle navigation system comprising:

a computer module including a processor and a map database:

5   a docking station, said computer module selectively matable with said docking

station.

2.   The navigation system of Claim 1, wherein the computer module

further includes at least one navigational sensor.

3.   The navigation system of Claim 2, wherein said computer module

10   further includes a GPS receiver.

4.   The navigation system of Claim 2, wherein the computer module

further includes at least one accelerometer.

5.   The navigation system of Claim 1, wherein said computer module

includes a first electrical connector and said docking station includes a second

15   electrical connector, said first electrical connector becoming electrically connected to

the second electrical connector when the computer module is mated with the docking

station.

6.   The navigation system of Claim 5, wherein said first electrical

connector is electrically connected to said CPU.

20   7.   The navigation system of Claim 6, wherein said first electrical

connector is electrically connected to a GPS receiver on said computer module.

8.   The navigation system of Claim 5, further including an operator

interface module electrically connected to said second connector.

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9.   The navigation system of Claim 8, wherein said operator interface module includes a display.

10.   The navigation system of Claim 5, wherein said docking station is fixedly mounted in a first vehicle.

5   11.   The navigation system of Claim 1, wherein said computer module further includes means for determining a position of the navigation system relative to the map database.

12.   The navigation system of Claim 11, further including means for determining a route from a beginning point to an ending point via said map database.

10   13.   The navigation system of Claim 12 wherein the computer module includes an inertial sensor generating a motion signal, said processor propagating position based upon said motion signal.

14.   A vehicle navigation system comprising:

a docking station fixedly mounted in a first vehicle;

15   a computer module including a CPU, map database, GPS receiver and at least one accelerometer, the computer module comprising a self-contained unit which is selectively matable with and removable from the docking station, the computer module including a first electrical connector which is electrically connected with a second electrical connector on the docking station when the computer module is mated

20   to the docking station, said second electrical connector being electrically connected to a power supply in the first vehicle; and

an operator interface module selectively electrically connectable to the CPU of the computer module, said operator interface module including a display and a plurality of user activatable switches.

15.   The vehicle navigation system of Claim 14, wherein the computer

5   module further includes means for determining a position of the vehicle navigation system relative to the map database and means for determining a route via the map database from the current location to a destination in the map database selected by the operator interface module.

16.   The navigation system of Claim 15 further including a second docking

10   station fixedly mounted in a second vehicle, said computer module selectively matable with said second docking station.

17.   The navigation system of Claim 16 wherein said operator interface module is selectively connectable to said first docking station or said second docking station.

15   18.   A vehicle navigation system comprising:

a computer module including a CPU, map database, first vehicle data, second vehicle data, and at least one of an inertial sensor or a GPS receiver;

said computer module utilizing said first vehicle data when the computer module is installed in the first vehicle and said second vehicle data when said computer

20   module is installed in the second vehicle.

19.   The vehicle navigation system of Claim 18· further including a user interface for providing user input regarding whether to use the first vehicle data or the second vehicle data.

20.   The navigation system of Claim 19, wherein the user interface includes a display and user operable switches for selecting between the first vehicle data and second vehicle data.

21.   The vehicle navigation system of Claim 18, wherein the first vehicle data includes information regarding the orientation of the computer module relative to the first vehicle when the computer module is installed in the first vehicle and the second vehicle data includes information regarding the orientation of the computer module relative to the second vehicle when the computer module is installed in the second vehicle.

22.   The navigation system of Claim 21, wherein the CPU propagates position of the vehicle navigation system based upon the first vehicle data when the computer module is installed in the first vehicle and based upon the second vehicle data when the computer module is installed in the second vehicle.

23.   A method for using a vehicle navigation system including the steps of:

a.   removably securing a CPU and inertial sensor in a first vehicle;

b.   removing the CPU and at least one inertial sensor from the first vehicle;

c.   after step b., removably securing the CPU and the at least one inertial sensor in a second vehicle.

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24.   The method of Claim 23 further including the steps of propagating the position of the first vehicle after said step a. based upon data from the at least one inertial sensor.

25.   The method of Claim 24, further including the step of propagating the position of the second vehicle based upon data from the inertial sensor after said step c.

26.   The method of Claim 25, further including the steps of:

storing first vehicle data regarding the orientation of the at least one inertial sensor when installed in the first vehicle; and

storing second vehicle data regarding the orientation of the at least one inertial sensor when installed in the second vehicle.

27.   The method of Claim 26 further including the steps of

propagating the position of the first vehicle based upon the first vehicle data when the CPU and first inertial sensor are installed in the first vehicle; and

propagating the position of the second vehicle based upon the second vehicle data when the CPU and at least one inertial sensor are installed in the second vehicle.

28.   The method of Claim 27 further including the step of manually selecting whether to use the first vehicle data or second vehicle data via a user input device.

29.   The method of Claim 28, wherein step a. includes the step of mating said CPU and at least one inertial sensor with a docking station mounted in the first vehicle.

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30.   A method for installing a vehicle navigation system including the steps of:

a.   electrically connecting a first docking station to a vehicle power supply of a first vehicle;

5   b.   mounting the first docking station in the first vehicle; and

c.   removably mating a CPU and map database to the first docking station.

31.   The method of Claim 30 further including the step of removably securing a gps receiver in the first vehicle during said step c

32.   The method of Claim 30 further including the step of removably

10   securing an acclerometer in the first vehicle during said step c.

33.   The method of Claim 30 further including the step of removably connecting a display to the first docking station.

34.   The method of Claim 30 further including the steps of:

d.   removing the CPU and map database from the first docking station; and

15   e.   after said step d, removably mating said CPU and said map database to a second docking station mounted in a second vehicle.

35.   A method for installing a vehicle navigation system including the steps of:

a.   electrically connecting a first docking station to a vehicle power supply

20   of a first vehicle;

b.   mounting the first docking station in the first vehicle; and

c.   removably mating a CPU and an inertial sensor to the first docking station.

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36.   The method of Claim 35 wherein said inertial sensor is an accelerometer.

37.   The method of Claim 36 further including the step of removably

5   connecting a display to the first docking station.

38.   The method of Claim 35 further including the steps of:

d.   removing the CPU and map database from the first docking station; and

e.   after said step d, removably mating said CPU and said map database to a second docking station mounted in a second vehicle.

10   39.   A method for using the vehicle navigation system including the steps of:

a) storing first vehicle data regarding operation of the vehicle navigation system when installed in a first vehicle;

b) storing second vehicle data regarding operation of the vehicle navigation

15   system when installed in a second vehicle;

c) selectively retrieving either the first vehicle data or the second vehicle data; and

d) propagating the position of the vehicle navigation system based upon the first vehicle data or second vehicle data selected in said step c).

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